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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/773,225

02/09/2004

David James Wilson

ALC 3116

6742

7590 08/13/2007  
KRAMER & AMADO, P.C.  
1725 Duke Street, Suite 240  
Alexandria, VA 22314

EXAMINER
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CHOU, ALBERT T

ART UNIT	PAPER NUMBER
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2616

MAIL DATE	DELIVERY MODE
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08/13/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No. 10/773,225	Applicant(s) WILSON ET AL.	
	Examiner Albert T. Chou	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Specification*

1. The attempt to incorporate subject matter into this application by reference to "...co-pending U.S. application filed November 24, 2003. The contents of the co-pending application are incorporated herein by reference." (See page 10, line 20) is ineffective because no co-pending application number is provided in the specification.

Furthermore, the descriptions to Fig. 4 and Fig. 5 [par. 0034] are incomplete and incomprehensible due to the missing of the aforementioned co-pending U.S. application.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

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For example, claims 1 recites the limitations:

*b) performing a longest prefix match (LPM) operation on each of the filter fields in their respective filter tables, wherein each LPM operation yields a result indicating lengths of prefixes potentially matching the key;*

*c) intersecting the results to obtain a set of potential prefix lengths; and*

*d) performing a series of hash lookups, based on the previously indicated potential prefix lengths, beginning with the longest potential prefix length and progressing to successively shorter potential prefix lengths until a matching prefix is found, which is the longest prefix matching the key.*

According to limitation b), it appears that each LPM operation yields a result indicating lengths of prefixes. It is not clear what is the definition of “lengths” in this context?

Furthermore, no example (e.g. by using the “number” or “mathematical expression”, rather than written statements) is provided in the specification to clearly illustrate how the method is executed in each step and what result is obtained after the execution of each step.

Under such circumstances, Examiner interprets the “lengths of prefixes” as the “number of bits of prefixes”, that is an integer, e.g. 8 or 2, if 8- or 2-bit of prefixes matches the key.

By intersecting the results (e.g. integers 8 and 2), regardless what is the meaning of intersecting or the result from intersecting to be, the claimed method is unable to one skilled in the art to “*obtain a set of potential prefix lengths; and perform a series of hash lookups, based on the previously indicated potential prefix lengths...*” as limitations set forth in c) and d).

Claim 17 is rejected on the same basis of rejection as to claim 1.

Claim 2-16 and 18-22 depend from claims 1 and 17, respectively, and, therefore, are rejected on the same basis of rejection as to their respective parent claim.

### **Conclusion**

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- US Patent No. 6,212,184 to Venkatachary et al. disclose “Fast Scalable Methods And Devices For Layer Four Switching”
- US Patent No. 6,839,703 to Jinzaki discloses “Information Apparatus, Table Retrieval Apparatus, Table Retrieval Method, And Recording Medium”

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- US Patent No. 7,031,320 to Choe discloses "Apparatus And Method For Performing High-Speed In Route Lookup And Managing Routing/Forwarding Tables"
- US Patent Application Pub. No. US 2004/0085953 A1 by Davis discloses "Longest Prefix Matching Using A Fixed Comparison Hash Table"
- US Patent No. 7,120,630 to Bass et al. disclose "Full Match (FM) Search Algorithm Implementation For A Network Processor"
- US Patent Application Pub. No. US 2005/0144553 A1 by Bass et al. disclose "Longest Prefix Match (LPM) Algorithm Implementation For A Network Processor"
- US Patent No. 6,490,592 to St. Denis et al. disclose "Method Of And Apparatus For Generating A Tree Data Structure Support Longest Match Lookup"
- US Patent No. 6,560,610 to Eatherton et al. disclose "Data Structure Using A Tree Bitmap And Method For Rapid Classification of Data In A Database"

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert T. Chou whose telephone number is 571-272-6045. The examiner can normally be reached on 8:30 - 17:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H. Pham, can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Albert T. Chou

July 30, 2007

Ac

  
CHI PHAM  
SUPERVISORY PATENT EXAMINER

8/9/07